REMARKS

The undersigned thanks Examiner Chang for the courtesy of a telephone conference on July 30, 2007 to discuss the content of the Office Action of February 12, 2007. This summary outlines essentially the entirety of the substance of the discussion of July 30, 2007 relating to patentability, thus is a complete report of the substance of the interview as required by 37 C.F.R. §1.133.

To summarize the telephone conference, it is believed the Examiner continues to reject the claims, in view of prior art that the Applicants firmly believe is distinguished by the claims, on the basis that the Examiner interprets the meaning of the claim term "topologically continuous" to include a domain defined by individual sections that are not connected, but one section of which may traverse a section of the article it in part defines (e.g., a "cylindrical" or "lamellar" structure, as referred to in the art). It is believed that all other issues relating to distinctions between the claimed invention and what is in the art of record have been fully vetted in prior prosecution communication, and this is the final point for resolution. To the extent that this assumption is incorrect, the Examiner is asked to clarify his position.

Applicants respectfully request reconsideration. Claims 1, 17, 23, and 24 were previously pending in this application. Claims 1, 17, 23, and 24 are pending for examination with claim 1 being an independent claim. No new matter has been added.

Rejection of Claims 1, 17, 23 and 24 under 35 U.S.C. §102(b)

Claims 1, 17, 23, and 24 have been rejected under 35 U.S.C. §102(b) as being anticipated by Lee et. al., *Macromolecules* **1989**, *22*, 2602-2606 ("Lee"). Applicants respectfully traverse the rejection.

Claim 1 recites a system comprising a polymeric article including a three-dimensionally periodic structure of a plurality of periodically occurring separate domains, with at least a first and a second domain each being *topologically continuous*, and with said first domain comprising a polymeric species containing an inorganic species capable of forming a ceramic oxide. This combination of elements can not be found in Lee.

A "topologically continuous" structure is continuous in the sense that a particular domain in a periodic, polymeric structure forms *a* continuous pathway through the structure (page 13, line 32 –

page 14, line 2 of the specification, emphasis added). That is, any two locations in a domain, or any two like domains within a structure, can be connected by a single, continuous pathway which does not have to cross through a different domain (e.g., a different material) to connect two locations in a domain and/or to connect two like domains. In the presently-claimed invention, at least two different such continuous domains exist and this (in combination with other recitations in the claim 1 and its dependent claims under consideration), is not found in the prior art relied upon. This is distinct from a structure in which a particular domain is defined by multiple sections of identical material, each section of which may traverse the structure, but the various sections of which are disconnected from each others (e.g. a "cylindrical," "spherical," or "lamellar" domain of the art).

From the application as a whole, those or ordinary skill in the art would clearly understand this definition of "topologically continuous." Its meaning is clear from the text of the specification of this application, from the figures, and examples contained within the application. An example of a structure that is not only topologically continuous, but which meets one of the requirements of all pending claims in that is includes at least two domains that are topologically continuous, is the following Figure 4, which is similar to Figure 4 of the specification of the instant patent application. Figure 4 is of a double gyroid structure 32, and includes three separate, topologically continuous domains. Two of them will be described here, specifically, domains 20 and 22. In the section illustrated, domain 22 is contained within domain 20. It can clearly be seen that any two locations within domain 20 can be connected by a single, continuous pathway which does not have to cross through domain 22. Similarly, any two locations within domain 22 can be connected by a single, continuous pathway which does not have to cross through domain 20. As illustrated, a line is drawn which defines a continuous pathway connecting locations A and B of topologically continuous domain 22. As those of ordinary skill in the art would clearly recognize, there is no portion of domain 22 of the double-gyroid structure 32 that can not be connected to any other portion (such as portions A and B) by a single, continuous pathway that does not need to cross a different domain such as domain 20. Thus, structure 32 includes at least a first and a second domain each being topologically continuous.

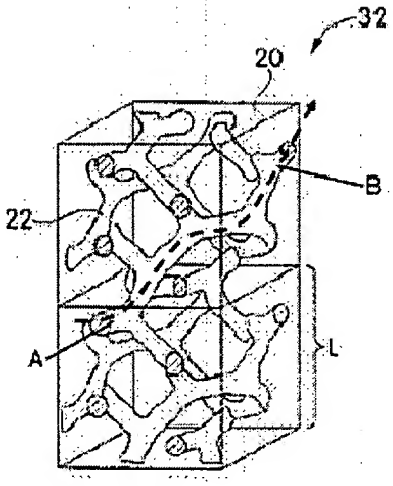

Fig. 4

Looking now to evidence in the art, an example demonstrating the meaning of topologically continuous is provided by the gyroid structure in Figure 7C (reproduced below, with annotation for purposed of this discussion) of Hajduk et al., Macromolecules 1994, 27, 4063 (copy enclosed). This structure contains at least two domains, I and II, and Hajduk notes that the components (domains) are continuous and periodic in all three principal directions, which means that they are topologically continuous. Specifically, any two locations within domain I can be connected by a single, continuous pathway which does not have to cross through domain II. For example, the dotted line indicates a pathway connecting locations I-a and I-b within topologically continuous domain I. Similarly, any two locations within domain II can be connected by a single, continuous pathway which does not have to cross through domain I.

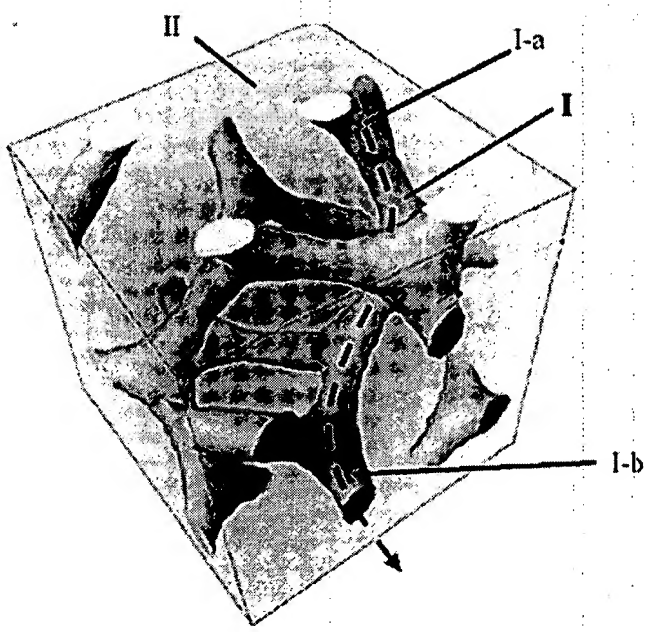

Figure. 7C (Hajduk et al.)

In contrast, the structures in Lee do not have two, topologically continuous domains. The structures in Lee are based on block copolymers having lamellar, cylindrical, and spherical domains, which define discrete domain structures. In discrete structures, domains are physically isolated from, and not in physical contact with, other like domains in the structure (page 14, lines 8-10 of the specification). For example, Figure A (provided here for purposes of comparison) illustrates a "lamellar" multi-domain structure, wherein the line indicates a pathway connecting two portions of a lighter-shaded domain (e.g., portions I-a and I-b). As shown in Figure A, the pathway, regardless of how it is drawn, must cross through a different, more darkly shaded domain (portion II-a of the darker domain, which is defined by portions II-a and II-b) in order to connect portions I-a and I-b of the first, lighter-shaded domain. That is, one can not draw a line that defines a single, continuous pathway connecting all portions of the lighter-shaded domain (or, in fact, any domain), and the structure thus is not "topologically continuous".

In another example provided for comparison, Figure B illustrates a "spherical" multi-domain structure, wherein the line indicates a pathway connecting two portions of a more darkly-shaded

domain which defines the spheres (e.g., portions I-a and I-b). As shown in Figure B, one can not draw a line that defines a single, continuous pathway between portions I-a and I-b of the darker domain without crossing through the lighter domain (domain II) in which the spheres are contained. That is, one can not draw a line that defines a single, continuous pathway connecting all portions of the darker domain. While the lighter domain (domain II) in which the spheres are contained is, itself, topologically continuous, there are not two different domains that are each topologically continuous as is required by each of the pending claims.

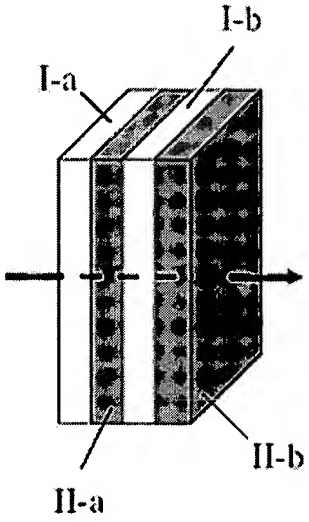

FIGURE A

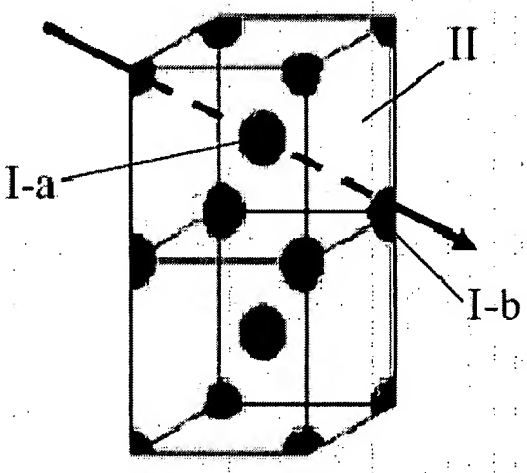

FIGURE B

Those of ordinary skill in the art would find the find the meaning of all claims containing the language noted above (claim 1: "...at least a first and a second domain each being *topologically continuous*... ") to be clear, and to clearly distinguish non-bicontinuous structures such as cylindrical, spherical, and lamellar and, in combination with other recitation of the claim(s), to distinguish prior art such as that relied upon by the Examiner. Because each claim limitation is not taught or suggested by Lee, claim 1 is patentable over Lee. Claims 17, 23 and 24 depend from claim 1 and are, therefore, also patentable over the Lee for at least this reason.

Applicants also repeat remarks made in their response of December 22, 2006, and note again the Declaration under 37 C.F.R. § 132 by Prof. Thomas accompanying that response.

In view of the above amendment, Applicants believe the pending application is in condition for allowance.

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Respectfully submitted,

By _____

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